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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,819

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Kunihiko Fukuchi

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NIXON PEABODY, LLP

401 9TH STREET, NW

SUITE 900

WASHINGTON, DC 20004-2128

EXAMINER

LOUIE, WAI SING

ART UNIT

PAPER NUMBER

2814

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,819	Applicant(s) FUKUCHI ET AL.	
	Examiner Wai-Sing Louie	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/24/06, 5/19/06, 4/17/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, claims 1-56, in the reply filed on 11/6/08, is acknowledged. The restriction is final.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-8, 11-15, 18-23, 25-29, 32-36, 39-43, 46-50, and 53-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (US Pub. 2003/0040150) in view of Kitazawa et al. (US 5,920,082).

With regard to claims 1, 8, 15, 22, 29, Yamazaki et al. disclose a thin film semiconductor device (¶ [0127] and fig. 1) comprising:

- A thin film transistor including:
 - ❖ A gate electrode 1002 comprising a conductive film over a substrate 1001 (¶ [0129] and fig. 1a);
 - ❖ An island shape gate insulating film including at least one of a silicon nitride layer, silicon oxynitride layer, and silicon oxide layer 1003 and

1004, which is in contact with the gate electrode 1002 (¶ [0134] and fig. 1a);

- ❖ A semiconductor layer 1011 (¶ [0137] and fig. 1a), where an end of the semiconductor layer 1011 is provided so as not to protrude from an end of the gate insulating layer 1004 (fig. 1a);
- ❖ Source and drain wirings 1040 and 1041 comprising a conductive material, which connected to the semiconductor layer 1011 (¶ [0141] and fig. 1a);
- Yamazaki et al. disclose the TFT is a switching element for a pixel region (¶ [0158]), but do not disclose a pixel electrode is connected to the TFT. As an evidence, Kitazawa et al. disclose a pixel electrode 43 is connected to the source electrode 37 of the switching TFT (Kitazawa col. 4, line 18 and fig. 3). Kitazawa et al. teach to prevent a display failure caused by the connection between the TFT and the pixel electrode, both electrodes should have sufficient contact and overlap with each other (Kitazawa col. 1, line 62 to col. 2, line 2). Therefore, it would have been obvious to one of ordinary skill in the art to modify Yamazaki's device with the teaching of Kitazawa et al. to connect the pixel electrode to TFT in order to prevent a display failure caused by the connection.

With regard to claims 4, 11, 18, 25, 32, 39, 46, and 53, Yamazaki et al. disclose the conductive material of the gate electrode is aluminum (¶ [0129]). Yamazaki et al. do not disclose the material for source and drain electrodes, however, using the same material for the source and drain wirings are considered as duplication of useful parts. Duplication of parts was held to have

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been obvious. *St. Regis Paper Co. v. Beemis Co. Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960).

With regard to claims 5, 12, 19, 26, 33, 40, 47, and 54, Yamazaki et al. disclose the TFT can be operated at an electric field effect mobility of $100 \text{ cm}^2/\text{Vsec}$ (¶ [0008]) and the semiconductor layer contains hydrogen and argon (¶ [0136]) and a semiconductor having a crystal structure (¶ [0008]).

With regard to claims 6, 13, 20, 27, 34, 41, 48, and 55, Yamazaki modified by Kitazawa et al. disclose the display device is a liquid crystal display and the substrates 28 and 46 sandwich liquid crystal 27 (Kitazawa fig. 2).

With regard to claims 7, 14, 21, 28, 35, 42, 49, and 56, are written in a functional language. In reference to the claim language referring to the functions of the device, i.e., “mounted in one of a TV receiver”, intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, and then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963); *Ex parte Masham*, 2USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). In the instant case and as explained above, Yamazaki shows all structural limitations specifically recited in the claim and it appears that the recited functional limitation does not affect the structure of Yamazaki’s device.

With regard to claims 36, 43, and 50, in addition to the limitations disclosed in claim 1 above, Yamazaki et al. also disclose:

- A driving circuit having 5030, but do not disclose a second TFT having a same structure as the first TFT. However, having a second TFT having a same structure as the first TFT is considered as duplication of useful parts. Duplication of parts was held to have been obvious. *St. Regis Paper Co. v. Beemis Co. Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960).

Claims 2-3, 9-10, 16-17, 23-24, 30-31, 37-38, 44-45, and 51-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (US Pub. 2003/0040150) modified by Kitazawa et al. (US 5,920,082) as applied to claim 1 above, and further in view of Tsuzumitani et al. (US 6,645,807).

With regard to claims 2, 9, 16, 23, 30, 37, 44, and 51, Yamazaki et al. do not disclose an adhesive improving layer comprising on of a metal material and a metal oxide material for pretreatment before forming at least one of layers to be formed. However, Tsuzumitani et al. disclose an adhesive layer 7 of TiO_x between a metal layer 8 of Pt and the oxide film 4 (Tsuzumitani col. 7, line 30 and fig. 1e). Tsuzumitani et al. teach metal layer 7a is formed as a pretreatment for the water rinsing, which convert the metal layer into metal oxide layer with superior adhesive (Tsuzumitani col. 7, lines 32-35). Therefore, it would have been obvious at the time the invention was made to modify Yamazaki's device with the teaching of Tsuzumitani et al. to provide a metal oxide layer in order to improve the adhesion between the dielectric material and the metal layer.

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With regard to claims 3, 10, 17, 24, 31, 38, 45, and 52, Yamazaki modified by Tsuzumitani et al. disclose a protective film 15 over the semiconductor layer 1 (Tsuzumitani col. 8, line 29).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is 571-272-1709. The examiner can normally be reached on 7:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wai-Sing Louie/
Primary Examiner, Art Unit 2814

Wsl
January 13, 2009.